Exercise - I (Conceptual Questions) Build Up Your Understanding

ALIMENTARY CANAL (MOUTH TO ANUS)

1. Parietal cells of mucosa in stomach secrete:
(1) Mucin (2) Pepsin
(3) HCl (4) All of the above

2. Which cells of mucosa layer of stomach secrete pepsinogen?
(1) Chief cell (2) Goblet cell
(3) Parietal cell (4) Oxyntic cell

3. Innermost layer of mucosa is made up of columnar epithelium except :-
(1) Oesophagus (2) Duodenum
(3) Intestine (4) Stomach

4. How many teeth in man grows twice in life:
(1) 32 (2) 28
(3) 20 (4) 12

5. In human which teeth help in cutting ?
(1) Canine (2) Incisor
(3) Molar (4) Premolar

DIGESTIVE GLANDS

6. In human being sphincter of Oddi is situated in-
(1) Common bile duct
(2) Ampulla of Vater
(3) Main pancreatic duct
(4) Common hepatic duct

7. Ptyalin is secreted by-
(1) Stomach (2) Salivary gland
(3) Pancreas (4) Bile

8. Ptyalin, an enzyme work in saliva in -
(1) Alkaline medium
(2) almost neutral medium
(3) Acidic medium
(4) all media

9. In pancreas, pancreatic juice and hormone are secreted by-
(1) Islets of Langerhans
(2) Cells of Acini and Islets of Langarhans respectively
(3) Istets of Langerhans and cells of Acini respectively
(4) None of these.

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10. C-shaped widest part of intestine
(1) Pancreas (2) Liver
(3) Duodenum (4) Thyroid

11. Which substance destroy the harmful bacteria in stomach?
(1) Cerumin (2) Chyme
(3) HCl (4) Secretin

12. One of the following is not a constituent of saliva:-
(1) Bicarbonate (2) Lysozyme
(3) Glucose (4) Immunoglobulin

13. What statement is wrong about bile ?
(1) It is necessary for fat digestion
(2) It is stored in the gall bladder
(3) It is important only for normal digestion of sugar
(4) It activates lipase

14. Which of the following is a function of gall bladder?
(1) Deamination
(2) Bile storage
(3) Synthesis of plasma protein
(4) Storage of fat soluble vitamin

15. Crypts of Leiberkuhn are found in between the villi. They secrete :
(1) Glucagon (2) Succus entericus
(3) Insulin (4) Gastric juice

16. Parotid salivary glands are present :
(1) Below the tongue
(2) Below the ears
(3) Below the eye orbits
(4) In the angle between two jaws

17. Specific cells found in liver are :
(1) Enterocyte cells
(2) Beta cells
(3) Hepatic cells
(4) Islets of Langerhans

PHYSIOLOGY OF DIGESTION AND OTHERS

18. Casein present in milk, which is -
(1) bacterium (2) sugar
(3) protein (4) fat

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19. Amylase enzyme acts on the -
(1) Starch (2) Protein
(3) Fat (4) Cane sugar

20. Liver cells secrete-
(1) amylopsin (2) trypsin
(3) lipase (4) bile

21. Peristaltic movements found in different parts of alimentary canal. In which one of these there is least peristalsis-
(1) Stomach (2) Duodenum
(3) Rectum (4) Oesophagus

22. Milk protein is curdled into calcium paracaseinate by -
(1) Maltose (2) Rennin
(3) Trypsin (4) lactose

23. The enzyme invertase (sucrase) hydrolyses-
(1) Glucose into sucrose
(2) Sucrose into glucose and fructose
(3) Starch into maltose
(4) Starch into sucrose

24. Amino acids are absorbed in-
(1) Blood capillaries of villi
(2) Wall of rectum
(3) lacteals and blood capillaries of villi
(4) lacteals of villi

25. Digestion of carbohydrate is affected by-
(1) Amylopsin (2) Lipase
(3) Erepsin (4) Pepsin

26. Trypsin is secreted by-
(1) Pancreas (2) Stomach
(3) Liver (4) Ileum

27. Proteins are broken down into amino acids in-
(1) Buccal cavity (2) Stomach
(3) Intestine (4) Rectum

28. Which reserve food is consumed by man during starvation?
(1) Fat (2) Protein
(3) Glucose (4) Vitamin

29. Ptyalin cannot work in stomach, because it becomes-
(1) Inactive due to HCl
(2) Inactive due to renin
(3) Inactive due to pepsin
(4) None of these

30. What is the important function of bile-
(1) Emulsification of fats
(2) Elimination of excretory products
(3) For digestion by enzymes
(4) Coordination of digestive activities

31. Some proteolytic enzymes are-
(1) Trypsin, Erepsin, Pepsin
(2) Amylase, Lipase, Zymase
(3) Amylopsin, Steapsin, Ptyalin
(4) Urease, Dehydrogenase, Zymase

32. Succus entericus is secreted by-
(1) Gastric glands
(2) Islets of langerhans
(3) Crypts of lieberkuhn & Brunner's gland
(4) Goblet cells

33. Glycogen is stored in-
(1) Blood (2) Liver
(3) Lungs (4) Kidney

34. Chymotrypsin is-
(1) Proteolytic enzyme
(2) Fat digestive enzyme
(3) Vitamin
(4) Hormone

35. Emulsification of fats by bile takes place in-
(1) Duodenum (2) Liver
(3) Stomach (4) Intestine

36. Absorption of digested food chiefly occurs in-
(1) Stomach (2) Colon
(3) Small Intestine (4) Large Intestine

37. The enzyme trypsinogen is secreted from-
(1) Duodenum (2) Pancreas
(3) Liver (4) Stomach

38. Enzyme pepsin acts upon food at a pH of about-
(1) 1.8 to split proteins
(2) 2 to split carbohydrate
(3) 7 to change protein into peptones
(4) 2 to change protein in amino acids

39. Our food mainly contains-
(1) Carbohydrates (2) Cellulose
(3) Sucrose (4) Glucose

40. Which one differ from the category of other three-
(1) Gastrin (2) Glucagon
(3) Secretin (4) Ptyalin

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41. A carbohydrate splitting enzyme is secreted by-
(1) Liver
(2) Zymogen cells of gastric glands
(3) Spleen
(4) Crypts of Lieberkuhn

42. Stomach is the main site for the digestion of -
(1) Fats (2) Carbohydrate
(3) Protein (4) All of these

43. The hormone involved in the discharge of pancreatic juice in mammal is called-
(1) Gastrin (2) Secretin
(3) Pancreozymin (4) Enterogasterone

44. Function of HCl in stomach is to-
(1) Kill micro-organism of food
(2) Facilitate absorption of food
(3) Dissolve hormones secreted by gastric glands
(4) Active trypsinogen to trypsin

45. Enzyme **maltase** in human gut acts on food at a pH of -
(1) More than 7 to change starch into maltose.
(2) Less than 7 to change starch into maltose.
(3) More than 7 to change maltose into glucose.
(4) Less than 7 to change maltose into glucose.

46. Simple sugar of blood is-
(1) Dextrin (2) Lactose
(3) Sucrose (4) Glucose

47. During prolonged starvation, body derives nutrition from storage of -
(1) Liver and adipose tissue
(2) Spleen
(3) Liver and lungs
(4) Subcutaneous fat and Pancreas

48. Enterokinase stimulates which of the following-
(1) Pepsinogen (2) Trypsin
(3) Pepsin (4) Trypsinogen

49. Maximum digestion of food take place in –
(1) Stomach (2) Jejunum
(3) Colon (4) Duodenum

50. Absence of which of these in bile will make fat digestion difficult-
(1) Cholesterol (2) Bile salts
(3) Pigment (4) Acids

51. Pancreatic juice is released into-
(1) Duodenum (2) Ileum
(3) Stomach (4) Jejunum.

52. The enzyme that catalyse the changing of emulsified fats to fatty acids and glycerol is-
(1) Pepsin (2) Lipase
(3) Amylase (4) Sucrose

53. Point out the odd one-
(1) Rennin (2) Secretin
(3) Calcitonin (4) Oxytocin

54. Pancreatic lipase acts upon-
(1) Glycogen
(2) Triglycerides
(3) Dissacharides
(4) Polypeptides

55. Bile is formed in-
(1) Gall bladder (2) Liver
(3) Spleen (4) Blood

56. Cholecystokinin is secretion of
(1) Duodenum that causes contraction of gall bladder
(2) Goblet cells of ileum stimulates secretion of succus entericus
(3) Liver and controls secondary sex characters
(4) Stomach that stimulates pancreas to release juice

57. Enzyme trypsinogen is changed to trypsin by
(1) Gastrin (2) Enterogastrone
(3) Enterokinase (4) Secretin

58. Castle's intrinsic factor is connected with internal absorption of-
(1) Pyridoxine (2) Riboflavin
(3) Thiamine (4) Cyanocobalamine

59. Cholesterol is synthesized in-
(1) Brunner's gland (2) Liver
(3) Spleen (4) Pancreas

60. Rennin acts on-
(1) Milk changing casein into calcium paracaseinate at 7.2 - 8.2 pH
(2) Proteins in stomach
(3) Fat in intestine
(4) Milk, changing casein into calcium paracaseinate at 1-3 pH

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61. Lacteals take part in -
(1) Digestion of milk
(2) Absorption of fat
(3) Digestion of lactic acid
(4) None of the above

62. Fatty acids and glycerol are first absorbed by-
(1) Lymph vessels (2) Blood
(3) Blood capillaries (4) Hepatic portal Vein

63. During prolonged fasting-
(1) First fats are used up, followed by carbohydrate from liver and muscles, and protein in the end
(2) First carbohydrate are used up, followed by fat and proteins towards end
(3) First lipids, followed by proteins and carbohydrates towards end.
(4) None of the above

64. Which of the following is absorbed in ileum-
(1) Fat (2) Bile salts
(3) Vit-K (4) Glucose

65. Which food substance is absorbed, without digestion?
(1) Carbohydrates (2) Proteins
(3) Vitamins (4) Fats

66. Mucus is secreted by the :-
(1) Stomach (2) Duodenum
(3) Large intestine (4) All of the above

67. Water absorption mainly occur in :-
(1) Buccal cavity (2) Intestine
(3) Stomach (4) Appendix

68. Which of the following absorbed in proximal intestine?
(1) Iron (2) Sodium
(3) Bile salts (4) Vitamin B_{12}

69. Substances which are not related with hepatic portal circulation :-
(1) Amino acid (2) Fatty acid
(3) Glucose (4) Electrolytes

70. Jaundice is a disorder of :
(1) Skin and eyes (2) Digestive system
(3) Circulatory system (4) Excretory system

71. Lactose composed of :-
(1) Glucose + galactose
(2) Glucose + fructose
(3) Glucose + glucose
(4) Glucose + mannose

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72. If for some reason the parietal cells of the gut epithelium become partially non-functional, what is likely to happen ?
(1) The pH of stomach will fall abruptly
(2) Steapsin will be more effective
(3) Proteins will not be adequately hydrolysed by pepsin into proteoses and peptones
(4) The pancreatic enzymes and specially the trypsin and lipase will not work efficiently

73. In stomach after physical and chemical digestion food is called:-
(1) Chyme (2) Chyle
(3) Amino acid (4) Bolus

74. Fully digested food reaches to liver by
(1) Hepatic portal vein (2) Hepatic artery
(3) Hepatic vein (4) All the above

75. A person who is eating rice. His food contains
(1) Cellulose (2) Starch
(3) Lactose (4) Protein

76. In mammals, milk is digested by action of-
(1) Rennin (2) Amylase
(3) Intestinal bacteria (4) Invertase

77. Stool of a person contain whitish grey colour due to malfunctioning of :-
(1) Pancreas (2) Spleen
(3) Kidney (4) Liver

78. Which of the following is a disaccharide :-
(1) Glucose (2) Fructose
(3) Sucrose (4) Galactose

79. If all the peptide bonds of protein are broken, then the remaining part is :-
(1) Amide (2) Oligosaccharide
(3) Polypeptide (4) Amino acid

80. Hydrolysis of lipid yields :-
(1) Fats
(2) Fatty acids and glycerol
(3) Mannose and glycerol
(4) Maltose and fatty acid

81. Stomach in vertebrates is the main site for digestion of :
(1) Proteins (2) Carbohydrates
(3) Fats (4) Nucleic acids

82. The chief function of bile is to :
(1) Digest fat by enzymatic action
(2) Emulsify fats for digestion
(3) Eliminate waste products
(4) Regulate digestion of proteins

83. The toxic substance are detoxicated in the human body by :
(1) Lungs (2) Kidneys
(3) Liver (4) Stomach

84. The end product of carbohydrate metabolism is :
(1) CO_2 and H_2O (2) NH_3 and CO_2
(3) NH_3 and H_2O (4) CO_2

85. The muscular contraction in the alimentary canal is known as
(1) Systole (2) Diastole
(3) Peristalsis (4) Spasm

86. End products of protein hydrolysis are :
(1) Mixture of amino acids
(2) Sugars
(3) Peptides
(4) 25 amino acids

87. Ptyalin is an enzyme of
(1) Salivary juice (2) Pancreatic juice
(3) Intestinal juice (4) Bile

88. The hormone 'secretin' stimulates secretion of-
(1) Pancreatic juice (2) Intestinal juice
(3) Salivary juice (4) Gastric juice

89. Succus entericus is also called are:
(1) Gastric juice (2) Intestinal juice
(3) Bile juice (4) Saliva

90. Just as hydrochloric acid is for pepsinogen, so is the:
(1) Haemoglobin to oxygen
(2) Enterokinase to trypsinogen
(3) Bile juice to fat
(4) Glucagon to glycogen

91. Where the lysozymes are found :
(1) In mitochondria
(2) In tears
(3) In saliva
(4) In saliva and tears both

92. The major site of protein breakdown to form free amino acids, is in the
(1) Kidney (2) Spleen
(3) Intestine (4) Bone-marrow

93. Trypsin differs from pepsin because it digests
(1) Carbohydrate in alkaline medium in stomach
(2) Protein, in alkaline medium in stomach
(3) Protein, in acidic medium of stomach
(4) Protein, in alkaline medium in duodenum

94. Pancreatic juice is :
(1) Alkaline in nature
(2) Acidic in nature
(3) Neutral in nature
(4) Both acidic and alkaline in nature

95. Bilirubin and Biliverdin are present in :
(1) Pancreatic Juice (2) Saliva
(3) Bile juice (4) Intestinal juice

96. The function of enterogasterone hormone is :
(1) To control excretion
(2) To inhibit gastric juice secretion
(3) Regulate the absorption of food
(4) To stimulate gastric glands to release gastric juice

97. What is the common passage for bile and pancreatic juices?
(1) Ampulla of Vater
(2) Ductus Choledochus
(3) Duct of Wirsung
(4) Duct of Santorini

98. Pepsinogen is secreted from :
(1) Oxyntic cells (2) Goblet cells
(3) Chief cells (4) Parietal cells

99. Cells of the pancreas is not digested by their own enzymes because :
(1) Enzymes are secreted in inactive form
(2) Cells are lined by mucous membrane
(3) Enzymes are released only when needed
(4) None of the above

100. To get ample supply of carbohydrates, one should eat -
(1) Meat (2) Gram
(3) Carrots (4) Rice

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101. Secretin :
(1) Stimulates enzymes secretion by pancreas, inhibits acid secretion in stomach, stimulates gall bladder
(2) Stimulates bicarbonate secretion by pancreas, inhibits acid secretion in stomach, stimulates bicarbonate secretion by liver
(3) Stimulates acid secretion in stomach, potentiates action of CCK, inhibits intestinal movement
(4) Stimulates gall bladder, inhibits acid secretion in stomach, stimulates bicarbonate secretion by pancreas

102. Protein are mainly required in the body for-
(1) Growth (2) Repair
(3) Both of these (4) None of these

103. Which of the following is the correct reaction of digestion in buccal cavity?
(1) Starch $\xrightarrow[6.8]{\text{Ptyalin}}$ Maltose
(2) Starch $\xrightarrow[7.9]{\text{Ptyalin}}$ Maltose
(3) Starch $\xrightarrow[8.8]{\text{Ptyalin}}$ Maltose
(4) Starch $\xrightarrow[8.6]{\text{Ptyalin}}$ Maltose

104. Pernicious anaemia is caused by deficiency of vitamin-
(1) C (2) B_1
(3) B_{12} (4) B_6

105. Another substance of the category of glucose, sucrose and maltose is-
(1) Myoglobin
(2) Starch
(3) Amino acids
(4) Haemoglobin

106. Identify the correct statement -
(1) In buccal cavity 30% starch is digested by ptyalin
(2) Thiocyanate is a special salt which kills the harmful bacteria. So, it is called bacteriocidal salt
(3) Ptyalin is found in human saliva, because human food is mainly made up of starch
(4) All of the above

107. Thiamine is another name for-
(1) Vit B_2 (2) Vit A
(3) Vit B_1 (4) Vit B Complex

108. Vit D is also called-
(1) Calciferol (2) Ascorbic acid
(3) Retinol (4) Folic Acid

109. In mammals carbohydrate are stored in the form of-
(1) Lactic acid in muscles
(2) Glycogen in liver and muscles
(3) Glucose in liver and muscles
(4) Glycogen in liver and spleen

110. Which pairing is not correct?
(1) Vit D –Rickets
(2) Vit K - Sterility
(3) Thiamine - Beri-Beri
(4) Niacin - Pellagra

111. Beri-Beri, Scurvy and Rickets are respectively caused by deficiency of -
(1) B, D & C (2) B, C & D
(3) D, B & A (4) A, D & C

112. Vitamin which induces maturation of R.B.C. :-
(1) B_1 (2) A (3) B_{12} (4) D

113. Which one is wrong pair?
(1) Scurvy – Vitamin C
(2) Rickets – Vitamin D
(3) Night blindness – Vitamin A
(4) Beriberi – Vitamin K

114. Which one is correctly matched?
(1) Vit. E – Tocoferol
(2) Vit. D – Riboflavin
(3) Vit. B – Calciferol
(4) Vit. A – Thiamine

115. Vitamin–C is :–
(1) Ascorbic acid (2) Citric acid
(3) Phosphoric acid (4) Glutamic acid

116. Which one of the following is the correct matching of a vitamin, its nature and its deficiency disease ?
(1) Vitamin K–Fat soluble–Beri–Beri
(2) Vitamin A–Fat soluble–Beri–Beri
(3) Vitamin K– Water soluble–Pellagra
(4) Vitamin A – Fat soluble–Night blindness

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117. Scurvy disease is due to :
(1) Presence of h-factor in blood
(2) Deficiency of vitamin E
(3) Virus
(4) Deficiency of vitamin C

118. In adults the deficiency of vitamin D causes:
(1) Rickets (2) Beri-beri
(3) Scurvy (4) Osteomalacia

119. Marasmus disease is caused due to :
(1) Protein deficiency
(2) Obesity
(3) Dwarfism
(4) Deficiency of vitamins

120. Which of the following does not belong to vitamin B group?
(1) Riboflavin
(2) Niacin
(3) Cyanocobalamine
(4) Tocopherol

121. Deficiency of thiamine causes :
(1) Beri-beri
(2) Rickets
(3) Caries
(4) Pellagra

EXERCISE-I (Conceptual Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	3	1	1	3	2	2	2	2	2	3	3	3	3	2	2
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	2	3	3	1	4	3	2	2	1	1	1	3	1	1	1
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	1	3	2	1	1	3	2	1	1	4	4	3	3	1	3
Question	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Answer	4	1	4	4	2	1	2	1	2	2	1	3	4	2	4
Question	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Answer	2	1	2	2	3	4	2	1	2	2	1	3	1	1	2
Question	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Answer	1	4	3	4	2	1	2	3	1	3	1	1	1	2	2
Question	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Answer	4	3	4	1	3	2	1	3	1	4	2	3	1	3	2
Question	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Answer	4	3	1	2	2	2	3	4	1	1	4	4	4	1	4
Question	121														
Answer	1														

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Exercise - II (Previous Year Questions) AIPMT/NEET

AIPMT 2007

1. Which one of the following is a fat-soluble vitamin and its related deficiency disease ?
(1) Calciferol – Pellagra
(2) Ascorbic acid – Scurvy
(3) Retinol – Xerophthalmia
(4) Cobalamine – Beri-beri

AIPMT 2008

2. Which one of the following is the ***correct matching*** of the site of action on the given substrate, the enzyme acting upon it and the end product ?
(1) *Small intestine*:Proteins $\xrightarrow{\text{Pepsin}}$ Amino acids
(2) *Stomach* : Fats $\xrightarrow{\text{Lipase}}$ micelles
(3) *Duodenum* : Triglycerides $\xrightarrow{\text{Trypsin}}$ monoglycerides
(4) *Small intestine* : Starch $\xrightarrow{\alpha\text{ Amylase}}$ Disaccharide (Maltose)

3. What will happen if the secretion of parietal cells of gastric glands is blocked with an inhibitor ?
(1) In the absence of HCl secretion, inactive pepsinogen is not converted into the active enzyme pepsin
(2) Enterokinase will not be released from the duodenal mucosa and so trypsinogen is not converted to trypsin
(3) Gastric juice will be deficient in chymosin
(4) Gastric juice will be deficient in pepsinogen

AIPMT 2009

4. Which one of the following pairs of food components in humans reaches the stomach totally undigested?
(1) Starch and cellulose
(2) Protein and starch
(3) Starch and fat
(4) Fat and cellulose

5. A young infant that feed entirely on mother's milk which is white in colour but the stools which the infant passes out is quite yellowish. This yellow colour due to ?
(1) Pancreatic juice poured into duodenum
(2) Intestinal juice
(3) Bile pigments passed through bile juice
(4) Undigested milk protein casein

AIPMT 2014

6. The initial step in the digestion of milk in humans is carried out by ?
(1) Lipase (2) Trypsin
(3) Rennin (4) Pepsin

AIPMT 2015

7. Gastric juice of infants contains :-
(1) nuclease, pepsinogen, lipase
(2) pepsinogen, lipase, rennin
(3) amylase, rennin, pepsinogen
(4) maltase, pepsinogen, rennin

NEET-I 2016

8. In the stomach, gastric acid is secreted by the-
(1) gastrin secreting cells (2) parietal cells
(3) peptic cells (4) acidic cells

9. Which of the following guards the opening of hepatopancreatic duct into the duodenum ?
(1) Semilunar valve (2) Ileocaecal valve
(3) Pyloric sphincter (4) Sphincter of Oddi

NEET-II 2016

10. Which hormones do stimulate the production of pancreatic juice and bicarbonate?
(1) Cholecystokinin and secretin
(2) Insulin and glucagon
(3) Angiotensin and epinephrine
(4) Gastrin and insulin

NEET(UG) 2017

11. Which cells of "Crypts of Lieberkuhn" secrete antibacterial lysozyme ?
(1) Paneth cells (2) Zymogen cells
(3) Kupffer cells (4) Argentaffin cells

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12. The hepatic portal vein drains blood to liver from :
(1) Stomach (2) Kidneys
(3) Intestine (4) Heart

13. A baby boy aged two years is admitted to play school and passes through a dental check - up. The dentist observed that the boy had twenty teeth. Which teeth were absent?
(1) Canines (2) Pre-molars
(3) Molars (4) Incisors

14. Which of the following options best represents the enzyme composition of pancreatic juice ?
(1) amylase, pepsin, trypsinogen, maltase
(2) peptidase, amylase, pepsin, rennin
(3) lipase, amylase, trypsinogen, procarboxypeptidase
(4) amylase, peptidase, trypsinogen, rennin

NEET (UG) 2018

15. Which of the following terms describe human dentition ?
(1) Thecodont, Diphyodont, Homodont
(2) Thecodont, Diphyodont, Heterodont
(3) Pleurodont, Monophyodont, Homodont
(4) Pleurodont, Diphyodont, Heterodont

16. Which of the following gastric cells indirectly help in erythropoiesis ?
(1) Chief cells (2) Mucous cells
(3) Goblet cells (4) Parietal cells

NEET (UG) 2019

17. Identify the cells whose secretion protects the lining of gastro-intestinal tract from various enzymes :-
(1) Chief Cells (2) Goblet Cells
(3) Oxyntic Cells (4) Duodenal Cells

18. Match the following structures with their respective location in organs :
(a) Crypts of Lieberkuhn (i) Pancreas
(b) Glisson's Capsule (ii) Duodenum
(c) Islets of Langerhans (iii) Small intestine
(d) Brunner's Glands (iv) Liver

Select the **correct** option from the following :

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iii)	(i)	(ii)	(iv)
(2)	(ii)	(iv)	(i)	(iii)
(3)	(iii)	(iv)	(i)	(ii)
(4)	(iii)	(ii)	(i)	(iv)

NEET (UG) 2019 (ODISHA)

19. Match the items given in column I with those in column II and choose the correct option :

Column-I	**Column-II**
(a) Rennin	(i) Vitamin B_{12}
(b) Enterokinase	(ii) Facilitated transport
(c) Oxyntic cells	(iii) Milk proteins
(d) Fructose	(iv) Trypsinogen

(1) a-iii, b-iv, c-ii, d-i (2) a-iv, b-iii, c-i, d-ii
(3) a-iv, b-iii, c-ii, d-i (4) a-iii, b-iv, c-i, d-ii

20. Kwashiorkor disease is due to :-
(1) Simultaneous deficiency of proteins and fats
(2) Simultaneous deficiency of proteins and calories
(3) Deficiency of carbohydrates
(4) Protein deficiency not accompanied by calorie deficiency

NEET (UG) 2020

21. Goblet cells of alimentary canal are modified from :
(1) Compound epithelial cells
(2) Squamous epithelial cells
(3) Columnar epithelial cells
(4) Chondrocytes

22. The enzyme enterokinase helps in conversion of :-
(1) pepsinogen into pepsin
(2) protein into polypeptides
(3) trypsinogen into trypsin
(4) caseinogen into casein

23. Identify the **correct** statement with reference to human digestive system.
(1) Vermiform appendix arises from duodenum
(2) Ileum opens into small intestine
(3) Serosa is the innermost layer of the alimentary canal
(4) Ileum is highly coiled part

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NEET (UG) 2020 (COVID-19)

24. Intrinsic factor that helps in the absorption of vitamin B_{12} is secreted by :-
(1) Goblet cells
(2) Hepatic cells
(3) Oxyntic cells
(4) Chief cells

25. The proteolytic enzyme rennin is found in :
(1) Intestinal juice (2) Bile juice
(3) Gastric juice (4) Pancreatic juice

NEET (UG) 2021

26. Succus entericus is referred to as :
(1) Pancreatic juice
(2) Intestinal juice
(3) Gastric juice
(4) Chyme

27. Sphincter of Oddi is present at :
(1) Ileo-caecal junction
(2) Junction of hepato-pancreatic duct and duodenum
(3) Gastro-oesophageal junction
(4) Junction of jejunum and duodenum

NEET(UG) 2022

28. Which of the following functions is **not** performed by secretions from salivary glands?
(1) Digestion of complex carbohydrates
(2) Lubrication of oral cavity
(3) Digestion of disaccharides
(4) Control bacterial population in mouth

29. Given below are two statements:
Statement I:
Fatty acids and glycerols cannot be absorbed into the blood.
Statement II:
Specialized lymphatic capillaries called lacteals carry chylomicrons into lymphatic vessels and ultimately into the blood.
In the light of the above statements, choose the **most appropriate** answer from the options given below:
(1) Both **Statement I** and **Statement II** are incorrect
(2) **Statement I** is correct but **Statement II** is incorrect
(3) **Statement I** is incorrect but **Statement II** is correct
(4) Both **Statement I** and **Statement II** are correct

NEET (UG) 2022

30. Role of enamel is to :
(1) Connect crown of tooth with its root.
(2) Masticate the food.
(3) Form bolus.
(4) Give basic shape to the teeth.

31. Choose the incorrect enzymatic reaction:
(1) Maltose $\xrightarrow{\text{Maltase}}$ Glucose + Galactose
(2) Sucrose $\xrightarrow{\text{Sucrase}}$ Glucose + Fructose
(3) Lactose $\xrightarrow{\text{Lactase}}$ Glucose + Galactose
(4) Dipeptides $\xrightarrow{\text{Dipeptidases}}$ Amino acids

EXERCISE-II (Previous Year Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	3	4	1	4	3	3	2	2	4	1	1	3	2	3	2
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	4	2	3	4	4	3	3	4	3	3	2	2	3	4	2
Question	31														
Answer	1														

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Exercise - III Master Your Understanding

EXERCISE-III (A) (NCERT BASED QUESTIONS)

1. Select the incorrect statements :-
(a) alimentary canal begins with an anterior cavity called buccal cavity.
(b) tooth is embedded in a socket of mandible bone only.
(c) human shows strict diphyodont type of dentition.
(d) oesophagus and the trachea open into the pharynx.
(1) a, b, c & d (2) a, b & c
(3) a, c & d (4) a, b & d

2. The oesophagus is a thin, long tube which extends ____ passing through the neck.
(1) Anteriorly (2) Posteriorly
(3) Horizontally (4) Obliquely

3. In human _____ is a small blind sac, which hosts some symbiotic micro-organism.
(1) Caecum (2) Colon
(3) Rumen (4) All of these

4. Select the correct structural sequence of alimentary canal facing from inside to outside.
(1) Serosa → Muscularis → Submucosa → Mucosa
(2) Muscularis → Serosa → Mucosa → Submucosa
(3) Mucosa → Submucosa → Muscularis → Serosa
(4) Submucosa → Mucosa → Muscularis → Serosa

5. All of the following are correct with respect to intestine of human except.
(1) Colon having ascending, descending and transverse part.
(2) Duodenum is C-shaped structure
(3) Pouches are present all along the length of intestine.
(4) Highly developed villi is restricted to small intestine.

6. Select the correct statements.
(a) Salivary glands situated just outside the buccal cavity.
(b) Liver is the largest digestive gland.
(c) Hepatic duct not arise from gall bladder.
(d) Sphincter of Oddi can regulate the release of pancreatic and bile juice in duodenum.
(1) a, b, c & d (2) a, b & d
(3) b, c & d (4) a, b & c

7. The process of digestion is accomplished by:-
(1) Mechanical process
(2) Chemical process
(3) Electrical process
(4) Both 1 & 2

8. Which of the following helps in lubricating and adhering the masticated food particles into a bolus?
(1) Salivary amylase
(2) *Mucous*
(3) Secretion of lachrymal gland
(4) Gastric juice

9. Which of the following electrolytes is/are present in saliva of human?
(1) Na^+ (2) K^+
(3) Cl^- (4) above all

10. Select the correct statements.
(1) Trypsinogen $\xrightarrow{\text{Chymotrypsin}}$ Trypsin
(2) Procarboxypeptidase $\xrightarrow{\text{Pepsin}}$ carboxypeptidase
(3) Proamylase $\xrightarrow{\text{Ptylin}}$ Amylase
(4) Pepsinogen $\xrightarrow{\text{HCl}}$ Pepsin

11. Select the odd with respect to enzymes present in adult human.
(1) Rennin (2) Renin
(3) Trypsin (4) Pepsin

12. Which of the following is not produced by the brush border cells of the intestinal mucosa.
(1) Dipeptidases (2) Nucleosidases
(2) Lipases (4) Steapsin

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13. All of the following is correct with reference to large intestine except.
(1) No significant digestive activity.
(2) Absorption of some water
(3) Absorption of certain minerals.
(4) Absorption of remaining glucose and amino acid.

14. In which of the following disease liver is affected, skin and eyes turn yellow due to the deposition of bile pigments.
(1) Vomiting (2) Jaundice
(3) Diarrhoea (4) Dysentery

EXERCISE-III (B) (ANALYTICAL QUESTIONS)

15. Match the following :

Column-I	Column-II
(A) Salivary gland	(i) Trypsinogen
(B) Stomach	(ii) Bile pigments
(C) Pancreas	(iii) Saliva
(D) Intestine	(iv) Erepsin
(E) Gall bladder	(v) Gastric juice

(1) A-v, B-iii, C-i, D-ii, E-iv
(2) A-iii, B-v, C-i, D-iv, E-ii
(3) A-iv, B-iii, C-ii, D-i, E-v
(4) A-ii, B-v, C-i, D-ii, E-iv

16. Find out the correct match from the following table :-

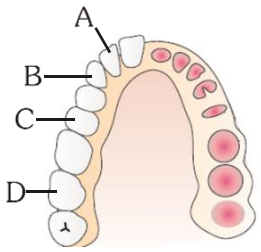
	Column-I	Column-II	Column-Ill
A	Goblet cells	Mucus	Prevent mucosa layer from damage of HCl
B	Lysozyme	Saliva	Antibacterial agent
C	Saliva	Submaxillary gland	Secrete salivary amylase
D	Chief cells	HCl	Stimulate gastric lipase

(1) Only 'A' (2) A and B
(3) Only C (4) C and D

17. Which of the following statements is/are incorrect regarding digestion and absorption of food in human beings :-
(a) About 90% of starch is hydrolysed by salivary amylase in our oral cavity
(b) Mucus cells in our stomach secrete the proenzyme trypsinogen
(c) Vitamin-D is produced in human body in skin
(d) Bile salts act as activator of pancreatic lipase
(1) Two, a and b (2) Two, a and c
(3) Two, a and d (4) Three, a, b and d

18. Largest internal organ of the body is :-
(1) Skin (2) Liver
(3) Pancreas (4) Small intestine

19. Identify A, B, C and D and choose correct option regarding their number in upper jaw:-



	A	B	C	D
(1)	Incisor-2	Canine-2	Premolar-2	Molar-3
(2)	Incisor-4	Canine-4	Premolar-8	Molar-12
(3)	Incisor-4	Canine-2	Premolar-4	Molar-6
(4)	Incisor-2	Canine-1	Premolar-2	Molar-3

20. Identify the correct match from the column I, II and III.

Column-I		Column-II		Column-Ill	
A	Salivary gland	a	Lacteal	i	Emulsification of fat
B	Villi	b	Goblet cells	ii	One pair
C	Intestinal epithelium	c	Bile juice	iii	Absorption of fat
D	Liver	d	Sub maxillary gland	iv	Mucous

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(1) A-d-i, B-a-iii, C-b-iv, D-c-ii
(2) A-d-ii, B-a-iii, C-b-iv, D-c-i
(3) A-a-ii, B-d-iv, C-b-iii, D-c-i
(4) A-b-i, B-a-ii, C-c-iii, D-d-iv

21. Read the following statements (A-D)
(A) The stomach stores the food for 4-5 hours
(B) The food mixes thoroughly with the acidic intestinal juice
(C) Trypsinogen is activated by an enzyme-enterogastrone, secreted by the intestinal mucosa
(D) Renin is enzyme found in gastric juice of infants which helps in digestion of milk protein
How many of the above statements are wrong?
(1) Four (2) One
(3) Two (4) Three

22. Conversion of large fat globules into smaller globule is :-
(1) Emulsification (2) Digestion
(3) Assimilation (4) Specification

23. Micelle formation occurs in :-
(1) Enterocyte (2) Duodenum
(3) Lacteals (4) Pancreas

24. Chymotrypsinogen is produced by
(1) Liver (2) Pancreas
(3) Stomach (4) Duodenum

25. Which of the following statement is not incorrect
(a) Human digestive system consists of alimentary canal only
(b) Oral cavity has a number of teeth & muscular tongue
(c) Mouth leads to pharynx
(d) Humans have incomplete alimentary canal
(1) a & b (2) b & c
(3) b only (4) a, b and c

26. The longitudinal mucosal folds of inner wall of stomach are called :
(1) Papilla of vater (2) Rugae
(3) Villi (4) Fissure

27. Gastric rugae are found in
(1) Kidney (2) Liver
(3) Nephron (4) Stomach

28. Trypsinogen is :
(1) Hormone secreted by mucosa
(2) Enzyme secreted by mucosa
(3) Inactive enzyme secreted by pancreas
(4) Secreted by endocrine gland related to digestion

29. Part of bile juice useful in digestion is :
(1) Bile salt (2) Bile pigment
(3) Bile matrix (4) All of them

30. From which of the following pepsin is secreted:
(1) Lungs (2) Stomach
(3) Salivary gland (4) Sebaceous gland

31. Given below are two statements:
Statement-I : Glucose, amino acids and Na^+ are absorbed from intestine into blood by active transport.
Statement-II : Absorption of glucose & amino acids never occurs by simple diffusion.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Both Statement-I and II both are incorrect.
(2) Statement-I is correct but statement-II is incorrect.
(3) Both Statement-I and II both are correct.
(4) Statement-I is incorrect but statement-II is correct.

32. Prorennin is secreted by :
(1) Zymogen cells (2) Sertoli cells
(3) Islets of Langerhans (4) Hepatocytes

33. Find out the correctly matched pair :
(1) Pepsinogen → Zymogenic cells
(2) HCl → Goblet cells
(3) Mucus → Oxyntic cells
(4) Pancreatic juice → Salivary glands

34. Among mammals, a significant role in the digestion of milk is played by :
(1) Rennin
(2) Invertase
(3) Amylase
(4) Intestinal bacteria

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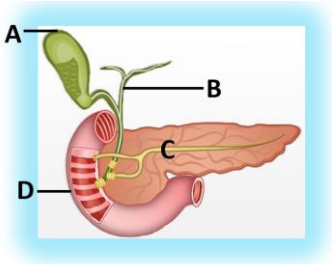
35. pH of gastric juice is :
(1) 2 (2) 4 (3) 6 (4) 8

36. Given below are two statements:
Statement-I : In wall of alimentary canal, serosa is outermost layer made of thin mesothelium.
Statement-II : Muscularis layer in stomach has outer circular muscle and inner longitudinal muscle.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Both Statement-I and II both are incorrect.
(2) Statement-I is correct but statement-II is incorrect.
(3) Statement-I is incorrect but statement-II is correct.
(4) Both Statement-I and II both are correct.

37. Identify A, B, C and D in the diagram given below :



	A	B	C	D
(1)	Gall bladder	Cystic duct	Pancreas	Duodenum
(2)	Gall bladder	Hepatic duct	Pancreas	Duodenum
(3)	Liver	Hepatic duct	Pancreas	Duodenum
(4)	Gall bladder	Common bile duct	Pancreas	Duodenum

38. The organ in human body where Brunner's glands are present ?
(1) Large intestine (2) Small intestine
(3) Liver (4) Kidney

39. 'Crypts of Lieberkuhn' are found in :
(1) Gall bladder (2) Liver
(3) Pancreas (4) Intestinal wall

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40. Glisson's capsule is associated with :
(1) Liver (2) Pancreas
(3) Lungs (4) Kidney

41. The main digestive function of enterokinase is :
(1) Conversion of pepsinogen into pepsin
(2) Conversion of trypsinogen into trypsin
(3) Conversion of trypsin into trypsinogen
(4) Stimulation of the gastric glands to secrete gastric juice

42. Castle intrinsic factor helps in absorption of
(1) Vitamin - B_{12} (2) Vitamin - B_6
(3) Vitamin - A (4) Vitamin - C

43. Pancreatic juice contain bicarbonate which is secreted by :
(1) Paneth cells (2) Goblet cell
(3) Kupffer's cell (4) Aciner cell

44. Identify the false statement :
(1) Oesophagus does not secrete any enzyme
(2) Gall bladder concentrate bile juice
(3) Human teeth are thecodont
(4) There are two pairs of salivary glands in humans

45. Pepsinogen is activated by
(1) Castle intrinsic factor
(2) HCl
(3) Bile juice
(4) Enterokinase

46. Find out the correct match :

Column I	Column II
A. Hepatic lobule	i. Submucosal glands
B. Brunner's glands	ii. Base of villi
C. Crypts of Lieberkuhn	iii. Glisson's capsule
D. Sphincter of Oddi	iv. Gall bladder
E. Cystic duct	v. Hepatopancreatic duct
	vi. Serous glands

	A	B	C	D	E
(1)	iii	vi	ii	v	iv
(2)	v	ii	iii	vi	i
(3)	iii	i	ii	v	iv
(4)	iv	vi	v	ii	i

47. Which an organ is affected in jaundice ?
(1) Stomach
(2) Pancreas
(3) Liver
(4) Parotid glands

48. Given below are two statements:
Statement-I : Salivary glands are situated inside buccal cavity & secrete salivary juice into it.
Statement-II : Saliva is mainly produced by parotid, sub maxillary and sub lingual glands.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Statement-I is incorrect but statement-II is correct.
(2) Both Statement-I and II both are incorrect.
(3) Both Statement-I and II both are correct.
(4) Statement-I is correct but statement-II is incorrect.

49. Identify the false statement ?
(1) Bile is secreted by liver
(2) Stomach is divided into two parts
(3) Parietal cell lie in wall of stomach
(4) Liver is the largest gland of human body

50. Given below are two statements; one is labelled as **Assertion (A)** and the other is labelled as **Reason(R)** .
Assertion (A) : Maximum absorption of digested food takes place in small intestine due to enormously increased surface area.
Reason (R) : Mucosa layer forms villi in intestine which has numerous microscopic projections called microvilli.
In the light of the above statements, choose the **most appropriate** answer from the options given below :
(1) If (A) & (R) both are correct but (R) is not the correct explanation of (A).
(2) (A) is correct but (R) is incorrect.
(3) (A) is incorrect but (R) correct.
(4) If (A) & (R) both are correct and (R) is the correct explanation of (A).

51. Which one is correct about the "rennin" ?
(1) It helps in digestion of milk-sugar.
(2) It is found in gastric juice of adult human.
(3) It is proteolytic enzyme found in saliva.
(4) It is found in gastric juice of infants.

52. Kwashiorkar disease is due to deficiency of:
(1) Protein (2) Fat
(3) Sugar (4) Hormone

53. Carbohydrate digestion occurs first in which structure?
(1) Mouth (2) Intestine
(3) Stomach (4) None of these

54. Enzyme pepsin acts in :
(1) Acidic medium in the pancreas
(2) Acidic medium in the stomach
(3) Intestine
(4) Mouth

55. Bile secretion is proportional to the concentration of :
(1) Protein (2) Fat
(3) Carbohydrate (4) None of these

56. Protein deficiency leads to :
(1) Kwashiorkar
(2) Marasmus
(3) Cretinism
(4) Both (1) and (2)

57. Defect of which cells leads to pernicious anaemia?
(1) Chief-cells
(2) Oxyntic cells
(3) Mast cells
(4) Peptic cells

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58. In mammals the teeth are
(a) of different types
(b) embedded in the cuplike socket in the jaw bones
(c) two sets present throughout life
The condition are referred as :
(1) Heterodont, thecodont, diphyodont
(2) Thecodont, heterodont, diphyodont
(3) Diphyodont, thecodont, heterodont
(4) Heterodont, diphyodont, thecodont

59. Which of the following process will be affected by the absence of enterokinase?
(1) Lipid → Fatty acid + glycerol
(2) Dipeptides → Amino acid
(3) Proteoses → Dipeptide
(4) Amylose → Maltose

60. Gastric juice contains :-
(1) HCl, Pepsinogen, Lipase
(2) Amylase, Dipeptidase, Lipase
(3) Trypsinogen, Pepsin, Rennin
(4) Chymotrypsinogen, Nucleases, Lipase

Exercise - III ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	2	2	1	3	3	1	4	2	4	4	1	4	4	2	2
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	2	1	2	3	2	4	1	2	2	3	2	4	3	1	2
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	2	1	1	1	1	2	2	2	4	1	2	1	4	4	2
Question	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Answer	3	3	1	2	4	4	1	1	2	2	4	2	1	3	1

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Important Notes